



MISHAP

LESSONS LEARNED

USMC Class A/B In-Theater Fire Analysis.

Mishap Summary

Mishap: Class A/B Fires

Damage: \$94,513,900

Fatalities: 3

Operation: Enduring Freedom

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Prologue

In June of 1991, four months after the conclusion of Operation Desert Storm, there was a major explosion and fire incident at Camp Doha, near Kuwait City. One hundred and two vehicles were damaged or destroyed, including four M1A1 tanks and numerous other combat vehicles. More than two dozen buildings sustained damages as wellⁱ. In addition, over 50 soldiers were injured and an estimation of \$14 million in munitions were damaged or destroyedⁱⁱ. Although the Camp Doha mishap was primarily due to a defective heater in a M992 ammunition carrier, the end result for the U.S. Army was a degradation of mission effectiveness.



Background

In less than 19 months, the Marine Corps suffered five major fire mishaps in OEF resulting in three deaths and over \$94 million dollars in damages. This *Mishap Lessons Learned* summarizes incidents aboard Camps and Forward Operating Bases (FOBs) in Afghanistan. The purpose of this summary is to identify trends and similarities from four of the five incidents and to provide possible fire prevention solutions. Information in this document was supplemented by a former II MEF (Fwd) Fire Marshal who served in OIF and by a I MEF (Fwd) Safety Manager who served in OEF.

Discussion

1. Before a Marine Expeditionary Brigade transferred authority to a Marine Expeditionary Force (Forward) (MEF (Fwd)) in March 2010, a fire started from a burn barrel that was placed too close to tri-walls in vicinity of the Initial Issue Provisioning (IIP) lot. This incident resulted in extensive damages to communications gear that was stored there.
2. In May 2010, a MEF (Fwd) experienced a significant fire incident at the Supply Management Unit (SMU) lot that destroyed two P-19 fire trucks, several other vehicles, CONEX boxes, hundreds of tri-walls and wooden boxes, etc. Fighting this fire was halted due to a severe sandstorm and reduced visibility. The most likely cause of this mishap was personnel smoking on the SMU lot outside of the designated smoking areas.
3. At FOB Nolay, a fire mishap occurred on the Class I lot due to burning embers carried by the wind from the burn pit.
4. At Camp Hansen, a fire mishap occurred when burning embers from the burn pit were carried by the wind towards tri-walls next to the Ground Based Operational Surveillance System (G-BOSS) storage container.
5. At an outlying camp, three Marines died and one Marine was injured when a fire ensued in their containerized housing unit.
6. Based on the above fire incidents, trends observed are:
 - Burn pits and burn barrels too close to storage lots
 - Complacency on smoking regulations



- Ineffective supervision and lack of adherence to SOPs and fire safety measures
- Not mitigating or considering the effects of wind



Considerations

- Forward HQ elements should deploy with skilled safety managers to enforce safety regulations and to identify emerging hazards.
- Use Tactical Safety Specialists and Unit Safety Representatives to execute core safety services including safety inspections and risk management mitigation techniques.
- Burn barrels are significant fire hazards and must be tightly controlled. Assign a "Burn Team" that is designated to dispose approved material and to inspect the burn barrels. Barrels must be vented properly and attached grills must be in place to prevent debris from escaping. Designated burn times should also be established that considers wind/weather variables. Additionally, consider employing gas-fired incinerators, where possible.
- Make sure smoking areas are policed properly and designated away from Life Support Areas (LSAs) and working areas.



- Verify all personnel obtain in-theater fire prevention briefs based on Operational Orders and Camp Commandant rules/regulations for strict compliance.
- Commanders should develop a fire prevention policy that ensures a ruthless enforcement of standards.
- Locations of burn pits and storage lots must be properly planned out and constructed; take into consideration the wind effects experienced in the desert.
- Periodically reassess camp/FOB layout in order to identify encroachment problems between burn pits, burn barrels, smoking areas, flammable materials, etc. and storage lots, ammunition depots, LSAs, and working areas.
- Make certain there are adequate spacing and access for fire-fighting vehicles and personnel into respective lots and properly manage any expansion to prevent congestion on the lots.
- The respective forward safety manager and fire marshal should closely coordinate fire prevention measures, regulations, and inspections of the burn pits and burn barrels.
- Safety and fire prevention personnel should ensure adequate and appropriate fire bottles are in place.
- The Base Operating Support-Integrator for either camps or FOBs should ensure contracted water trucks are integrated to their fire mishap response plan.
- When there are no dedicated fire-fighting assets available due to remote location, a fire bucket team should be created to extinguish fires.
- Camp/FOB rules regarding unauthorized cooking in tents, wooden shelters, and LSAs should be ruthlessly enforced.
- "Daisy chaining" electrical cords is a high-risk fire hazard that must be avoided.



- Use only Underwriters Laboratories (UL) or European Conformity (CE) - certified electrical cords, surge protectors, and convertors.
- Routinely conduct maintenance cleaning on air conditioning filter units.
- Ensure smoke detectors are installed and inspected regularly.

Summary

Fire incidents are preventable mishaps that can lead to death, injury, and loss of material. It takes engaged leadership at all levels to ensure our Marines and Sailors are in compliance with the local regulations at the Camps and FOBs. Marines and Sailors must also take the initiative to identify a fire hazard and to report it quickly through the appropriate fire and/or safety representatives. We must combat these threats to keep our Marines focused on fighting the enemy and winning battles in-theater.



End Notes

ⁱ "History of Events," Army Accident Report 910711001, Fort Rucker, AL: US Army Safety Center, September 20, 1991, p.3-4.

ⁱⁱ TAB I- *The Camp Doha Explosion/Fires (July 1991)*, http://www.gulflink.osd.mil/du/du_tabi.htm (accessed July 28, 2011).